



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/589,919	08/18/2006	Shinji Yamamoto	2946-204	1069
6449 7590 01/22/2010 ROTHWELL, FIGG, ERNST & MANBECK, P.C. 1425 K STREET, N.W. SUITE 800 WASHINGTON, DC 20005				
EXAMINER				
CRAIG, DWIN M				
ART UNIT		PAPER NUMBER		
2123				
NOTIFICATION DATE		DELIVERY MODE		
01/22/2010		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTO-PAT-Email@rfem.com

# Office Action Summary

**Application No.**

10/589,919

**Applicant(s)**

YAMAMOTO ET AL.

**Examiner**

DWIN M. CRAIG

**Art Unit**

2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 September 2009.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-12 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO/SI/220)  
4) ☐ Interview Summary (PTO-413)  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_  
Paper No(s)/Mail Date \_\_\_\_\_

**DETAILED ACTION**

1. Claims 1-12 have been presented for reconsideration based on Applicants' amended claim language and arguments.

***Response to Arguments***

2. Applicants' arguments presented in the 9/30/2009 responses have been fully considered; the Examiner's response is as follows:

2.1 As regards Applicants' response to the objection to the specification, the Examiner thanks the Applicants' for amending the specification and hereby withdraws the earlier objection to the same.

2.2 As regards Applicants' response to the 35 U.S.C. 101 rejections of claims 9-12, the Examiner thanks the Applicants' for amending claims 9-12 and hereby withdraws the 35 U.S.C. 101 rejections of claims 9-12.

2.3 As regards Applicants' response to the Obvious Type Double Patenting rejections of claims 1, 2, 3, 5, 6, 8, 9, 10 and 12, the Examiner thanks the Applicants' for sending in a terminal disclaimer, however, the provided disclaimer has not been approved because; the required 3.73(b) statement was not provided, therefore the Obviousness Type Double Patenting rejections will be maintained.

2.4 As regards Applicants' response to the 35 U.S.C. 102(e) rejection of claims 1, 2, 4, 5, 6, 8, 9, 10 and 12 the examiner notes that Applicants' have amended the claims and therefore narrowed the scope of the claimed subject matter. In view of the newly presented claimed limitations, more specifically, "matching each of the *tubular parts* of the knit garment with any of the plurality of axes, while keeping the *parts tubular*, so as to make the each of the *tubular*

parts surround said any of the plurality of axes and temporarily positioning the knit garment with respect to the human model” the previously applied 35 U.S.C. 102(c) rejections have been withdrawn.

2.5 An updated search has revealed new art.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-12 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6 of U.S. Patent No. 7,379,786 in view of U.S. Patent 5,754,431 to Kotaki. Although the conflicting claims are not identical, they are not patentably distinct from each other because while the language of the instant claims is not identical to the language of the claims in U.S. Pat. '786 it would have been obvious to an artisan

of ordinary skill to modify the language of claims 1-6 of U.S. Pat. '786 to derive the instant claims as presented. More specifically and using independent claim 1 of each case as an example; both claims teach a simulated human model with polygons and a plurality of axis and a simulated knit garment which is placed on the simulated human model and then shrunk or expanded to fit said model, also and further including a wearing of the knit garment outside the human model, see dependent claim 3 of U.S. Pat. '786.

More specifically;

As regards independent claim 1 of the application, the preamble teaches,

A method for simulating wearing of a knit garment on a human model, the knit garment being a virtual knit garment and having a plurality of parts, the human model being a three-dimensional human model and comprising a plurality of polygons, the method comprising the steps of:

Claim 5 of the '786 reference teaches, A computer readable medium encoded with a *wearing simulation program*, comprising: storing command for storing in *3D an axis of a human model*, and a position and an orientation of *a plurality of polygons* provided on a surface of the human model; arranging command for tentatively arranging *a virtual knit garment in a three-dimensional space, in such a way that said axis passes through an interior of the virtual knit garment*;

Claim 1 of the application then teaches, providing the human model with a plurality of axis;

Claim 5 of the '786 reference teaches, storing command for storing in 3D an *axis* of a *human model*, a *human model* will have a plurality of axis associated with the model.

Claim 1 of the application then teaches, matching each of the parts of the knit garment with any of the plurality of axes and temporarily positioning the knit garment with respect to the human model;

Claim 5 of the '786 reference teaches, arranging command for tentatively arranging a virtual knit garment in a three-dimensional space, in such a way that said axis passes through an interior of the virtual knit garment; and *wearing command* for *fitting* the virtual knit garment to the human model, when performing the fitting a positioning will occur on the human model of the virtual garment. (fitting will involve matching to the different parts of the human model)

Claim 1 of the application then teaches, shrinking/expanding the temporarily positioned knit garment toward the axis matched with each of the parts of the knit garment, whereby the knit garment is worn on the human model.

Claim 5 of the '786 reference teaches, and wearing command for fitting the virtual knit garment to the human model by *shrinking/expanding* the virtual knit garment toward the axis for each stitch of the virtual knit garment.

However, the claims of U.S. Pat. '786 do not expressly teach;

"matching each of the tubular parts of the knit garment with any of the plurality of axes, while keeping the parts tubular, so as to make the each of the tubular parts surround said any of the plurality of axes and temporarily positioning the knit garment with respect to the human model"

U.S. Patent 5,754,431 to Kotaki expressly teaches the tubular knitted fabric garments, see Figures 9A and 9B.

At the time of the invention, it would have been obvious to an artisan of ordinary skill to have modified the teachings of U.S. Pat. '786 with the teachings of U.S. Patent 5,754,431 to Kotaki to obtain the expressly claimed tubular parts as claimed in the newly amended claims.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1, 2, 4, 5, 6, 8, 9, 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,968,297 to Ziakovic et al. in view of U.S. Patent 5,754,431 to Kotaki.

4.1 As regards independent claims 1, 5 and 9 and using claim 1 as an example, *Ziakovic teaches, a method for simulating wearing of a knit garment on a human model, the knit garment being a virtual knit garment and having a plurality of parts,* (see Figures 1-9A and as regards a teaching of a *virtual dummy* see Col. 2 lines 38-43, more specifically "...The invention provides a method of viewing a garment made up of garment pieces on a virtual dummy..." a virtual dummy is the same as a *human model*) *the human model being a three-dimensional human model and comprising a plurality of polygons* (see Figure 16 and Col. 6 lines 44-48 more specifically, "the surface resulting from the accumulation of convex polygons..."), *the method*

*comprising the steps of: providing the human model with a plurality of axes (Figure 8 and the descriptive text); matching each of the parts of the knit garment with any of the plurality of axes (see Col. 4 lines 1-3, placing is functionally the same as matching, see also Col. 7 lines 6-12 not the discussion regarding point-to-point relationship between the surface of the dummy and the piece of fabric) and temporarily positioning the knit garment with respect to the human model; and shrinking/expanding the temporarily positioned knit garment toward the axis matched with each of the parts of the knit garment in a peripheral direction to obtain a natural size of each of the parts, whereby the knit garment is worn on the human model so that each of the parts appears outside the human model (see the discussion of deformation and fitting of the knit garment to the model in Col. 9-14).*

However, *Ziakovic* does not expressly disclose, “matching each of the tubular parts of the knit garment with any of the plurality of axes, while keeping the parts tubular, so as to make the each of the tubular parts surround said any of the plurality of axes and temporarily positioning the knit garment with respect to the human model”

U.S. Patent 5,754,431 to Kotaki expressly teaches the tubular knitted fabric garments, see Figures 9A and 9B.

*Ziakovic* and *Kotaki* are analogous art because they both come from the same problem solving area of designing Knit Garments.

At the time of the invention, it would have been obvious, to an person of ordinary skill in the art to have used the teachings of *tubular knit garments* with the teachings of modeling a knit garment.



The motivation for doing so would have been to provide an accurate model of a knit garment if and for no other reason being that knit garments have tubular portions and in order to have a useful model, such a model, must contain elements and features that reflect the composition of an actual item in order for the simulation model to be accurate and have fidelity and therefore usefulness in the real world.

Further and in regards to the requirement for a teaching, suggestion and/or motivation please see *Dann v. Johnson*, 425 U.S. 219, 189 USPQ 257 (1976) and *Leapfrog Enterprises, Inc. v. Fisher-Price, Inc.*, --F.3d--, 82 USPQ2d 1687 (Fed. Cir. 2007) as well as *KSR International Co. v. Teleflex Inc.*, 550 U.S. --, 82 USPQ2d 1385 (2007). The cited cases recently decided by the Federal Circuit Court as well as the U.S. Supreme Court clearly set forth that the references themselves do not have to expressly disclose a teaching, suggestion or motivation to combine references in an obviousness type of art rejection.

Therefore, it would have been obvious to combine the teachings of *Kotaki* with the teachings of *Ziakovic* in order to obtain the invention as specified in claims 1, 2, 4, 5, 6, 8, 9, 10 and 12.

**4.2** As regards claims 2, 6 and 10 and using claim 2 as an example, *Ziakovic* discloses wherein: the human model comprises at least a torso and both arms, along with an axis of the torso, and axes of the right and left arms; the plurality of parts of the virtual knit garment comprises at least a body and sleeves, each of the parts is matched with any of the axes of the human model, and the temporal positioning is performed so that the axis matched with each of the parts passes through the inside of each of the parts; and both of the sleeves of the virtual garment are shrunk/expanded such that upper parts of the both sleeves contact with upper parts

*of the arms of the human model and spaces are provided at lower parts of the both sleeves with respect to the upper parts of the arms of the human model. (see the discussion of deformation and fitting of the knit garment to the model in Col. 9-14 and Figures 3-18 and the descriptive text).*

**4.3** As regards claims 4, 8 and 12 and using claim 4 as an example, , *Ziakovic* discloses *wherein after wearing the knit garment, each of stitches of the knit garment is moved close to a mean position of surrounding stitches, whereby positions of the stitches of the knit garment are smoothed, and the smoothing is repeatedly performed.* (see the discussion of deformation and fitting of the knit garment to the model in Col. 9-14 and Figures 3-18 and the descriptive text).

**5.** Claims 3 and 7 are rejected under 35 U.S.C. 103(a) unpatentable over U.S. Patent 6,968,297 to *Ziakovic et al.* in view of U.S. Patent 5,754,431 to *Kotaki*.

**5.1** As regards claims 1 and 2, from which claim 3 depends and claims 5 and 6 from which claim 7 depends, see above.

## **5.2 OFFICIAL NOTICE**

As regards claims 3 and 7, having a stitch on a virtual or actual garment be arranged or re-arranged along the *course or whale* direction is well known in the garment art.

For example U.S. Patent 4,306,429 teaches stitch wales in bonded fabrics.

Claim interpretation, the disclosed teachings of *Ziakovic* teaches that a deformation function is optimized, see Figure 14 item S342 and Col. 14 lines 55-60 more specifically, “The garment can then be relaxed (step S34). Then comes the mechanical simulation step (S38) which makes it possible, for a given fabric, to find the correct drape for it, and which makes it possible

to remove any remaining *deformations*. Is being interpreted to mean the same as the claimed *distortions* as expressly claimed in Applicants' instant claims.

At the time of the invention, it would have been obvious, to an artisan of ordinary skill in the art to have had a model of a tubular element in a virtual knit garment to be rearranged along the course or wale direction.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 3 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Using dependent claim 3 as an example, the claim reads, The method for simulating wearing of claim 2, wherein after wearing the virtual knit garment on the human model, each stitch of the virtual knit garment is rearranged along a course direction and a wale direction of the virtual knit garment, whereby *distortions* between parts having different matching axes on the virtual knit garment are removed. *Emphasis added.*

Ziakovic teaches that a deformation function is optimized, see Figure 14 item S342 and Col. 14 lines 55-60 more specifically, "The garment can then be relaxed (step S34). Then comes the mechanical simulation step (S38) which makes it possible, for a given fabric, to find the correct drape for it, and which makes it possible to remove any remaining *deformations*. A realistic image of the garment as put on the dummy is thus obtained (S39).", *emphasis added.*

However, the claim language of Ziakovic specifically refers to *deformation*, and not to *distortion* the instant specification specifically describes that deformation is not being modeled or performed, paragraph [0015], “In this manner, the sleeves can be simulated without calculating deformation of the sleeves which is caused by the gravity.”

It is unclear if the term “distortions” as expressly claimed is the same as the deformations as disclosed in the prior art reference Ziakovic. Further it is unclear what the term “*distortions*” means such that an artisan of ordinary skill would be able to determine the metes and bounds of the claimed limitations.

The specification describes the removal of distortions in paragraph [0018], “Furthermore, in order to remove the distortions of the connections between the body and sleeves, in the approximate correction in the course direction, it is preferred that the stitch positions on the course only be corrected without correcting the straight or curved shape itself of the course.” In a deformation the stitch positions would be corrected to account for the removal of the deformations of the fabric, it is unclear if the teachings of Ziakovic are functionally the same as the teachings in the specification, that corrections of distortions are the same as removal of deformations as disclosed in the Ziakovic reference.

Clarification and/or amendment are required.

### ***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DWIN M. CRAIG whose telephone number is (571)272-3710. The examiner can normally be reached on 10:00 - 6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul L. Rodriguez can be reached on (571) 272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dwin M Craig/  
Examiner, Art Unit 2123